

REMARKS

By the present amendment, new claims 21-24 have been added. Support for the new claims is found in the original application, in particular on page 11, lines 17-19.

Claims 1-24 are pending in the present application. Independent claim 1, and claims 2-8, 17-18, and 21-22 dependent directly or indirectly thereon, are directed to an optical film. Independent claim 9, and claims 10-16, 19-20, and 23-24 dependent directly or indirectly thereon, are directed to a liquid crystal display.

In the Office Action dated December 19, 2003, claims 1-20 were rejected under 35 U.S.C. 103(a) as obvious over US 6,088,079 to Kameyama et al. (Kameyama) in view of JP 09-113727 to Nakajima et al. (Nakajima). It was acknowledged in that Office Action that Kameyama does not suggest the flexural rigidity of the present invention, but it was alleged that Nakajima teaches adjusting the flexural rigidity of an optical film, so that the claimed property would have been obvious optimization “depending on the desired end use of the product.”

In the Advisory Action dated May 10, 2004, it is further alleged that the teaching of Nakajima regarding varying the thickness of a protective film to adjust flexural rigidity would have been easily extended to an optical component made of several layers “to obtain a desired flexural rigidity and thus a desired flexibility of the optical film”.

The rejection is again respectfully traversed. It is submitted that the problem addressed by Nakajima is very different from the problem addressed by the present invention, so that Nakajima does not provide any suggestion or motivation to obtain the presently claimed invention.

In particular, Nakajima addresses the problems of LCD curvature and picture nonuniformity under intense temperature variations (see paragraph [0003]), which Nakajima

attributes to changes in the protective layer (see paragraph [0007]). The prior art solutions mentioned in Nakajima are use of a soft binder or reduction in the amount of plasticizer (see paragraph [0004]), controlling film dryness (see paragraph [0005]) or residual solvent during manufacture (see paragraph [0006]). Nakajima discloses that these prior art solutions are insufficient, whereas Nakajima has identified that providing a protective layer with a modulus of direct elasticity E and a thickness h that satisfy the proposed equation (involving the value E.h³, which Nakajima labels “flexural rigidity”) makes it possible to control thermal contraction effectively (see paragraphs [0014]-[0015]).

In other words, not only are the teachings of Nakajima limited to a single layer protective film and not applicable to a film made of several layers, as discussed in the response to the previous Office Action, but also, Nakajima addresses a dimensional change problem that occurs during use of a display and not at the time of assembling the display. Nakajima never suggests adjusting the flexural rigidity of an optical film comprising a polarizing plate and a brightness enhancement film, and Nakajima does not even suggest that the single-layer protective film adjustment it discloses could be adapted to different purposes than resistance to dimensional change in the assembled display.

In contrast, the present invention is directed to the problems of “foaming” and lack of “workability” in particular when an optical film comprising a polarizing plate and a brightness enhancement film is attached to a LCD cell. Specifically, the “foaming” phenomenon results when an optical film having a relatively high flexural rigidity is attached to a glass cell, for example. Foaming most often occurs at the end of the attached portion, for example, if the film has a warp. An illustration of this phenomenon is shown in the attached drawing. Conventionally, this

problem had been addressed by pressurizing the film by autoclave, or slowing the speed of attachment, for example.

Correspondingly, “workability” describes a property in connection with the occasional requirement to peel off an optical film after or during attachment, and to reattach the optical film. For example, this need may arise when attachment is imprecise, or when impurities or foam enter between an optical film and a display cell, for example. When a film is so “reworked”, stress to the cell tends to be increased, which may even cause a breakage of the cell. Conventionally, this problem has been addressed by slowing the speed of reworking.

In summary, “foaming” and “workability” problems tend to occur during attachment of an optical film, and are not correlated to the problem of dimensional change in a display during temperature variations, as discussed in Nakajima, which occurs during use of the assembled display.

Now, in contrast to the conventional teaching, the present inventors have identified the flexural rigidity of the optical film as the variable to be adjusted in order to solve the problems of “foaming” and “workability”. It is submitted that a person of ordinary skill in the art, when confronted with “foaming” and lack of “workability” problems at the time of attaching an optical film to a display cell, for example, would not be motivated to refer to Nakajima, because Nakajima (i) addresses a different problem (dimensional change in a display), and (ii) proposes a different solution (adjusting the properties of the protective layer).

In addition, even if, arguendo, a person of the art had been motivated to refer to Nakajima, that person would not have found in Nakajima a suggestion to adjust a flexural rigidity of the optical film as defined in the present claims, because that person could not have correlated the

physical properties of the protective single-layer film, so as to avoid dimensional change in varying temperature, as taught in Nakajima, and accordingly, the person of ordinary skill in the art would not have expected the physical properties of an optical film as defined in the presently claimed invention to help in addressing foaming or workability problems.

In summary, the flexural rigidity feature of the optical film as defined in the present claims could not have been taught or suggested by Nakajima. Thus, Nakajima does not remedy the deficiencies of Kameyama. Therefore, the present claims are not obvious over any combination of these references.

In view of the above, it is submitted that the rejection should be withdrawn.

In conclusion, the invention as presently claimed is patentable. It is believed that the claims are in allowable condition and a notice to that effect is earnestly requested.

In the event there is, in the Examiner's opinion, any outstanding issue and such issue may be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

In the event this paper is not considered to be timely filed, the Applicants hereby petition for an appropriate extension of the response period. Please charge the fee for such extension and any other fees which may be required to our Deposit Account No. 50-2866.

Respectfully submitted,

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